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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,656	11/29/2001	Richard S. Ohran	14113.21.1	7388

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EXAMINER	
BONURA, TIMOTHY M	

ART UNIT	PAPER NUMBER
2114	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/997,656	OHRAN, RICHARD S.
	Examiner	Art Unit
	Tim Bonura	2114

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/8/02 and 3/28/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Bergsten, U.S. Patent Number 6,499,091.

3. Regarding claim 1:

a. Regarding the limitation of "after losing the data blocks at the primary mass storage device, receiving a first read request that would otherwise be processed by the primary computer system" Bergsten discloses a system that has a map of data which is incremented after a suspension of the first data storage device. (Lines 5-9 of Column 9).

b. Regarding the limitation of "transmitting the first read request to the backup computer system" Bergsten discloses a system that the second data storage device can become the de facto primary storage device after the first data storage unit is suspended. (Lines 48-56 of Column 4).

c. Regarding the limitation of "as the backup computer system returns one or more data blocks from the backup mass storage device in response to the read request, writing the one or more data blocks to a mass storage device associated with the primary computer system" Bergsten discloses a system that once the first storage device is re-

established, data blocks in the map are copied back to the first storage device. (Lines 26-32 of Column 3).

d. Regarding the limitation of "prior to a full copy of the data blocks of the backup mass storage device being restored to the mass storage device associated with the primary computer system, performing the acts of: receiving a second request, wherein the second read request is for at least one of the one or more data blocks that have been written to the mass storage device associated with the primary computer system" Bergsten discloses a system that the map made be of a size large enough to support 0 to n accesses of the primary data storage device. (Lines 18-25 of Column 3).

e. Regarding the limitation of "responding to the second read request using the mass storage device associated with the primary computer system" Bergsten discloses a system that the map is used to respond to the request for the primary storage unit when it is suspended. (Lines 21-23 of Column 3).

4. Regarding claim 2, Bergsten disclose a system that can copy the complete mirror from the second storage device back to the primary storage device over a communications link. (Lines 20-26 of Column 2 and Lines 19-22 of Column 5).

5. Regarding claim 3, Bergsten discloses a system wherein the map stores values that are changed after the primary storage device is suspended. The map is stored separately from the secondary mirror. The mirror is used to rebuild the primary storage device. (Lines 14-27 of Column 2).

6. Regarding claim 4, Bergsten discloses a system with a communication link that allows for fast transfer of the mirror data to re-establish the primary storage device. (Lines 1-5 of Column 5).

7. Regarding claim 6, Bergsten discloses that the system memory devices maybe a removable and a hard drive. (Lines 9-19 of Column 5).

8. Regarding claim 7, Bergsten discloses a system wherein the primary storage device is part of the computer mirror subsystem. (Lines 53-54 of Column 1).

9. Regarding claim 8, Bergsten discloses a system that the map is used to respond to the request for the primary storage unit when it is suspended. (Lines 21-23 of Column 3).

10. Regarding claim 9:

f. Regarding the limitation of "once the data blocks have been lost from the primary mass storage device, the primary computer system accessing the backup mass storage device such that read requests that would have been directed to the lost data blocks are instead directed to the backup mass storage device" Bergsten discloses a system that the map is used to respond to the request for the primary storage unit when it is suspended. (Lines 21-23 of Column 3).

g. Regarding the limitation of "the primary computer system copying data blocks read from the backup mass storage device to create a present copy of the data blocks in the primary mass storage device" Bergsten discloses a system that can copy the complete mirror from the second storage device back to the primary storage device over a communications link. (Lines 20-26 of Column 2 and Lines 19-22 of Column 5).

h. Regarding the limitation of "the primary computer system tracking which read data blocks have been copied to the primary mass storage device using an overwrite map" Bergsten discloses a system with Bergsten discloses a system that once the first storage device is re-established, data blocks in the map are copied back to the first storage device. (Lines 26-32 of Column 3).

i. Regarding the limitation of "creating a static snapshot copy of a selected data set of the backup mass storage device, the static snapshot copy preserving the selected data set as the selected data set existed at a time after the data blocks were lost at the primary mass storage device" Bergsten discloses a system that has a map of data which is incremented after a suspension of the first data storage device. (Lines 5-9 of Column 2).

j. Regarding the limitation of "copying the static snapshot copy to the primary mass storage device except for data blocks that are indicated to be current in the overwrite map" Bergsten discloses a system wherein the map stores values that are changed after the primary storage device is suspended. The map is stored separately from the secondary mirror. The mirror is used to rebuild the primary storage device. (Lines 14-27 of Column 2).

11. Regarding claim 10, Bergsten discloses a system in which the changes in the map can be used to update the primary and second storage devices. (Lines 58-67 of Column 4).

12. Regarding claim 11, Bergsten discloses that the map will increment and decrement values as to keep track of status of data. (Lines 35-45 of Column 3 and Lines 64-65 of Column 4).

13. Regarding claim 12, Bergsten discloses a system with a communication link that allows for fast transfer of the mirror data to re-establish the primary storage device. (Lines 1-5 of Column 5).

14. Regarding claim 13, Bergsten discloses a system with a communication link that allows for fast mirror of data to re-establish the primary storage device. (Lines 1-5 of Column 5).

15. Regarding claim 14, Bergsten discloses the backup is a mirror. Mirroring is known to be a complete data back up of a storage device. (Lines 55-58 of Column 1).

16. Regarding claim 15:

k. Regarding the limitation of "a primary computer having a primary mass storage device where data blocks are stored" Bergsten discloses a system with a primary storage device. (Lines 12-14 of Column 3).

l. Regarding the limitation of "a backup computer having a backup mass storage device where a backup copy of the data blocks is stored prior to the primary mass storage device losing one or more data blocks" Bergsten discloses a system with a mirror second storage device. (Lines 12-14 of Column 3).

m. Regarding the limitation of "a transport link for communicating between the primary computer and the backup computer, such that when the primary mass storage device loses one or more data blocks, the primary computer and the backup computer communicate over the transport link to perform the acts of: directing read requests of the one or more lost data blocks to the backup mass storage device" Bergsten discloses a system with a communication link that allows for fast transfer of the mirror data to re-establish the primary storage device. (Lines 1-5 of Column 5).

n. Regarding the limitation of "writing at least one data block read from the backup mass storage device to the primary mass storage device" Bergsten discloses a system in which the mirrored data is used to restore the primary storage device. (Lines 20-26 of Column 2).

o. Regarding the limitation of "taking a first snapshot of the backup mass storage device for preserving the backup data blocks as the backup data blocks existed at a time after the one or more data blocks were lost" Bergsten discloses the backup is a mirror. Mirroring is known to be a complete data back up of a storage device. (Lines 55-58 of Column 1).

p. Regarding the limitation of "creating a first snapshot copy of the backup data blocks for transferring the backup data blocks to the primary computer" Bergsten discloses the backup is a mirror. Mirroring is known to be a complete data back up of a storage device. (Lines 55-58 of Column 1).

q. Regarding the limitation of "identifying any of the data blocks in the first snapshot copy that correspond to data blocks the primary computer has not written to the primary mass storage device subsequent to the primary mass storage device losing the one or more data blocks" Bergsten discloses a system that has a map of data which is incremented after a suspension of the first data storage device. (Lines 5-9 of Column 9).

r. Regarding the limitation of "making the identified data blocks available to the primary computer" Bergsten discloses a system in which the changes in the map can be used to update the primary and second storage devices. (Lines 58-67 of Column 4).

17. Regarding claim 16, Bergsten discloses a system that can copy the complete mirror from the second storage device back to the primary storage device over a communications link. (Lines 20-26 of Column 2 and Lines 19-22 of Column 5).

18. Regarding claim 17, Bergsten discloses a system that can copy the complete mirror from the second storage device back to the primary storage device over a communications link. (Lines 20-26 of Column 2 and Lines 19-22 of Column 5).

19. Regarding claim 18:

s. Regarding the limitation of "experiencing loss of data blocks from the primary computer system" Bergsten discloses a system that detect failure. (Lines 12-16 of Column 3).

t. Regarding the limitation of "accessing the backup mass storage device such that read requests that would have been directed to the lost data blocks are instead directed to the backup mass storage device" Bergsten discloses a system that the map is used to respond to the request for the primary storage unit when it is suspended. (Lines 21-23 of Column 3).

u. Regarding the limitation of "receiving data blocks read from the backup mass storage device and copying the received data blocks to create a present copy of the data blocks in the primary mass storage device" Bergsten discloses a system that can copy the complete mirror from the second storage device back to the primary storage device over a communications link. (Lines 20-26 of Column 2 and Lines 19-22 of Column 5).

v. Regarding the limitation of "tracking which received data blocks have been copied to the primary mass storage device using an overwrite map" Bergsten discloses

that the map will increment and decrement values as to keep track of status of data. (Lines 35-45 of Column 3 and Lines 64-65 of Column 4).

w. Regarding the limitation of "receiving from the backup computer system a static snapshot copy of a selected data set of the backup mass storage device, the static snapshot copy preserving the selected data set as the selected data set existed at a time after the data blocks were lost at the primary mass storage device" Bergsten discloses a system wherein the map stores values that are changed after the primary storage device is suspended. The map is stored separately from the secondary mirror. The mirror is used to rebuild the primary storage device. (Lines 14-27 of Column 2).

x. Regarding the limitation of "copying the static snapshot copy to the primary mass storage device except for data blocks that are indicated to be current in the overwrite map" Bergsten discloses a system wherein the map stores values that are changed after the primary storage device is suspended. The map is stored separately from the secondary mirror. The mirror is used to rebuild the primary storage device. (Lines 14-27 of Column 2).

20. Regarding claim 19, Bergsten discloses a system in which the changes in the map can be used to update the primary and second storage devices. (Lines 58-67 of Column 4).

21. Regarding claim 20, Bergsten discloses that the map will increment and decrement values as to keep track of status of data. (Lines 35-45 of Column 3 and Lines 64-65 of Column 4).

22. Regarding claim 21, Bergsten discloses a system with a communication link that allows for fast transfer of the mirror data to re-establish the primary storage device. (Lines 1-5 of Column 5).

23. Regarding claim 22, Bergsten discloses a system with a communication link that allows for fast transfer of the mirror data to re-establish the primary storage device. (Lines 1-5 of Column 5).

24. Regarding claim 23, Bergsten discloses the backup is a mirror. Mirroring is known to be a complete data back up of a storage device. (Lines 55-58 of Column 1).

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

26. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergsten as applied to claim 1 above, and further in view of McDowell.

27. Regarding claim 5, Bergsten discloses a system with mirror storage devices. Bergsten does not disclose a system with a separate storage device that is not mirrored. McDowell discloses a system with non-mirrored storage devices. (See Figure 2 item 233). It would have been obvious to one of ordinary skill in the art at the time of the invention to include a non-mirrored storage device such as disclosed by McDowell in the system of Bergsten. One of ordinary skill would have been motivated because Bergsten discloses that the instructions of the mirroring system can be stored in memory of the appliances or the device.

Conclusion

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tim Bonura.**

- The examiner can normally be reached on **Mon-Fri: 7:30-5:00, every other Friday off**. The examiner can be reached at: **703-305-7762**.

29. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, **Rob Beausoliel.**

- The supervisor can be reached on **703-305-9713.**

30. The fax phone numbers for the organization where this application or proceeding is assigned are:

- **703-872-9306 for all patent related correspondence by FAX.**

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov/. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

32. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **receptionist** whose telephone number is: **703-305-3900.**

33. Responses should be mailed to:

- **Commissioner of Patents and Trademarks**
  P.O. Box 1450
  Alexandria, VA 22313-1450

NADEEM IQBAL
PRIMARY EXAMINER

Tim Bonura
Examiner
Art Unit 2114

tmb
June 25, 2004